

**IMPROVEMENT OF GRAFT ACCEPTANCE THROUGH  
MANIPULATION OF THYMIC REGENERATION**

**ABSTRACT**

The present disclosure provides methods for inducing tolerance in a recipient to a  
5 mismatched graft of an organ, tissue and/or cells. By reactivating the recipient's thymus and  
providing hematopoietic stem cells from the donor, the previously "foreign" matter becomes  
recognized as "self" in the recipient and is not rejected. The patient's T cell population is  
depleted. In some embodiments, the hematopoietic stem cells are CD34+. The recipient's  
thymus is reactivated by disruption of sex steroid mediated signaling to the thymus. In some  
10 embodiments, this disruption is created by administration of LHRH agonists, LHRH antagonists,  
anti-LHRH receptor antibodies, anti-LHRH vaccines or combinations thereof.